

Civil Engineer Support to Operations **NOBLE EAGLE** and **ENDURING FREEDOM**

At **WAR** with Terrorism

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Sept. 11, 2001 — another day that will live in infamy. More than 3,000 innocent people died in the attacks in

New York, Washington DC and Pennsylvania. The terrorists got our attention. They woke up the “sleeping giant,”

brought our nation together, and focused our resolve on

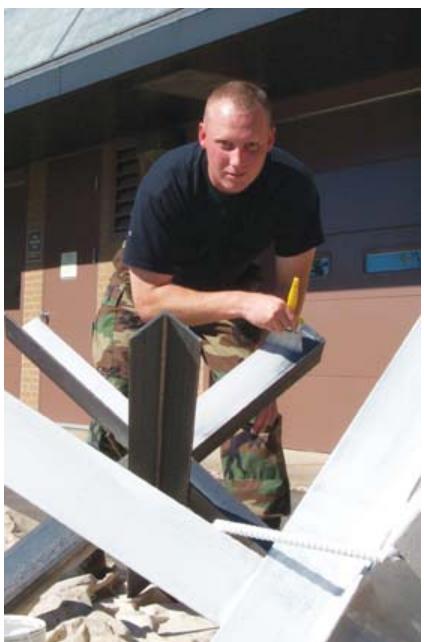
fighting and eliminating terrorism at the source.

The Department of Defense responded with operations on two fronts — one at home and the other anywhere that terrorists hide, against any country that hides them. President Bush advised the American people

to go to work “with a heightened sense of awareness,” an awareness that, unlike America’s past wars, the war against terrorism will not be fought exclusively “over there.”

The mission of Operation NOBLE EAGLE is to protect America “over here.” Homeland defense and civil support services are being provided by DoD’s Total Force, including 50,000 members of the military reserves who have now been called to active duty.

The mission of Operation ENDURING FREEDOM is to fight terrorism at its source — and the U.S. Air Force and its civil engineers have risen to the challenge.



SSgt Alan Vanguilder, 148th CES, Minnesota Air National Guard, paints one of several newly constructed “road jacks” Oct. 1. The Wing’s CEs constructed numerous jacks for use on roadways to provide enhanced protection for the resources and personnel supporting Operation NOBLE EAGLE. (Photo by MSgt Dean V. Kuhlman)



405th Air Expeditionary Wing firefighters add sand bags to a security wall at a deployed location Jan. 5. (Photo by SSgt Shane Cuomo)

What's Underway

The Air Force responded to the call to fight terrorism with its full range of assets — literally thousands of airlift, bomber and fighter operations. Air Force civil engineers responded in kind, serving in our traditional roles and fighting our own kind of battle to bed down troops and aircraft in a hostile environment. In all, more than 400 CEs responded directly to the Sept. 11 attacks, providing firefighter, construction and explosive ordnance disposal (EOD) support, not to mention those at Air Force and major command headquarters who stood up Crisis Action Teams (CATs).

In New York, the governor called up more than 150 Air National Guard firefighters and Prime BEEF members for direct support in New York City. CE troops from fighter wings assigned to First Air Force responded to the

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immediate increase in flights for the Southeast Area Defense Sector. EOD personnel supported President Bush, following him from Sarasota, FL, back to the White House. EOD also supported personnel at McGuire Air Force Base, NJ, and Dover AFB, DE. Throughout the Air Force CE community, CATs stood up immediately and have been manned continuously since the attacks.



A CE staff sergeant excavates a trench so that drainage pipe can be laid at an undisclosed forward operating site Nov. 18. (Photo by MSgt Thomas Cook)

“Homeland defense” has taken on new meaning since Sept. 11. ANG and Air Force Reserve forces are actively engaged in supporting Combat Air Patrols (CAPs) across the United States, as well as airport security and other requirements. The Air Force is flying CAPs continuously over key areas in the country, as well as randomly over cities and major public events. More than 500 CE troops are directly supporting these CAPs, but it would be safe to say that all 19,000 members of the Air Force’s active duty CE force — with hundreds of members of the Guard and Reserve — are supporting Operations NOBLE EAGLE and ENDURING FREEDOM.

Prior to Sept. 11, CE forces were already providing support to various missions all over the world. CE is highly involved in the Aerospace Expeditionary Force and

other commitments, deploying more than 1,600 engineers per month last year. In May and June, there were more than 2,100 CEs deployed, with more than 1,050 at bases in and around the Persian Gulf. As of Dec. 31, more than 2,000 CE members were in the Operation ENDURING FREEDOM area of responsibility (AOR) or on their way.

Today, Air Force CEs are providing the lion’s share of manpower for base operating support at places most of us had never heard of before — from beddown to infrastructure improvements to fire protection, EOD and nuclear, biological and chemical (NBC) defense.

“We should be proud of what we have accomplished so far,” said Col Tim Byers, chief, Readiness and Installation Support Division (AF/ILEX), Office of The Civil Engineer. “We have constructed tent cities, water plants, power generation and supply, and other infrastructure. We are building two new air bases and reconstituting others, and are supporting more than 19,000 personnel and hundreds of aircraft.”

The 823rd and 820th RED HORSE Squadrons have deployed and tasked more than 500 personnel for heavy construction in the AOR, with other active, Guard and Reserve RED HORSE squadrons contributing personnel. More than 450 firefighters are deployed, with more than 60 vehicles in theater. We are also providing the



SSgt Chance Pasley, 366th CES, uses a circular saw to trim a sheet of plywood for a tent floor Jan. 12. (Photo by SSgt Michael Gaddis)



(From left) SSgts Tracy McBride and Jeramy Isaac and A1C Ryan O’Connell, all from the 823rd RHS, construct an equipment marshalling area for the air terminal operations center at a deployed location. (Photo by TSgt Carole Steele)



SSgt Phillip Langhus, 51st CES, shows Traci Brock how to properly fit a gas mask designed for children onto her daughter, Caitlin, during a Non-Combatant Evacuation Operation exercise for Osan dependents Oct. 19 at Osan Air Base, Republic of Korea. (Photo by SSgt Johnny Saldivar)

majority of EOD capability in the AOR, with about 100 specialists deployed.

Nearly 150 readiness troops have deployed with protective and detection equipment. They are training Air Force personnel to use individual protective equipment and

establishing joint NBC detection and decontamination operations with the U.S. Army in the AOR.

CE personnel have evaluated numerous airfields and potential air bases all over Central Asia, producing quality reports for the warfighters, including matrices of airfield capabilities for each aircraft being flown in the AOR. These evaluations are taking place on the ground, often augmented by "GeoReach," a global expeditionary planning system technology.

"We are experiencing exciting things with GeoReach," said Lt Col Brian Cullis, chief, Information Systems Integration Branch under AF/ILEX. "It's presenting users with opportunities to gain insight into the AOR prior to deployment using satellite imagery and layers of digital information. Whether coming from the GeoReach teams at Air Combat Command (ACC), Pacific Air Forces (PACAF) or AF/ILEX, the war planners have had geographic information system tools like no other."

GeoReach has already provided great assistance in supporting airfield assessments, while enabling the sharing of site survey data, photography and other information. The GeoReach imagery and global positioning system processes will ultimately serve as core elements for an integrated site survey framework being formed by the Services.

What Lies Ahead

Many challenges exist as we bed down in new locations, from fixing drainage problems, purifying water and excavating rock-hard soils, to force protection and host nation issues and preparing for winter operations. We are reconstituting bases that we previously bombed. Our pavement evaluation and RED HORSE teams reported that one base had excellent pavement for aircraft operations — except for 23 craters and three spall fields!

Challenges will exist with sustaining forces in the AOR, especially with a likely

A 355th Air Expeditionary Group firefighter waits for water pressure to build while preparing to extinguish a fire that erupted near an undisclosed airfield. (Photo by TSgt Scott Reed)



SrA Robert Keatts opens an environmental control unit for repair on Nov. 15. Airman Keatts is a deployed member of the 366th CES. (Photo by TSgt Michael R. Nixon)

increase in humanitarian assistance. We also have challenges at home, especially with CE manning. Deployments for ENDURING FREEDOM and requirements for NOBLE EAGLE are impacting our continental U.S. base operations, with CE forces stretched thin between operations and home base support. In addition, this winter should prove especially busy for EOD personnel with support needed in Utah for the Winter Olympics.

The Sept. 11 terrorist attacks shifted the U.S. military's NBC passive defense paradigm, highlighting our vulnerability to unconventional attacks. The terrorist attacks, and the anthrax incidents that followed, identified adversaries with an NBC capability and the will to use it directly against the United States. The anthrax attacks accelerated the Counter Biological Warfare Defense initiative. Efforts, originally scheduled a year out, were reprogrammed





A1C Matthew Milanese, 39th CES explosive ordnance disposal technician, sweeps a fence line for ordnance at Incirlik AB, Turkey, Oct. 8. (Photo by SrA Matthew Hennen)

that are evolving every day."

NBC warning and reporting is being integrated at locations with both Air Force and Army personnel so that all reports flow through base communications channels. They have also established integrated equipment decontamination operations for all materiel movement within theater.

Lessons Learned

To assist in doing our job both on the home front and in the AOR, we are gathering and reporting information on a daily basis from numerous sources. This information flow helps CEs make informed decisions and

to produce the concept of operations by December 2001.

"There has been an obvious heightened sensitivity to NBC matters, but we're carrying on, despite our low manning numbers in the readiness career field," said Lt Col Jim Kasmer, chief, Emergency Services Branch under AF/ILEX. "In fact, our newest deployed locations have U.S. Air Force and U.S. Army NBC folks working together. We are working to make our NBC operations more flexible to meet the new threats



An airman from the 4th CES, Seymour Johnson AFB, NC, installs an ash heater in a tent at the U.S. and coalition military compound near Bishkek, Kyrgyzstan. The 4th CES is augmenting the 86th Expeditionary Contingency Response Group from Ramstein AB, Germany. The buildup there is in preparation for more than 2,000 follow-on forces. (Photos by Maj Mike Young, above, and Capt Kristi Beckman, right)

better support the warfighter.

"We have done a very good job of flowing information from the field through ACC (CENTAF Rear CE) to ILE and vice versa," said Colonel Byers, "and we continue to communicate well with supporting major commands like U.S. Air Forces in Europe and PACAF, working war readiness materiel and other issues. As with any base civil engineer, the Wing BCEs in theater should be able to contact the Air Force Civil Engineer Support Agency (AFCESA) directly for assistance. We can always do better in communicating and coordinating information, and we welcome suggestions on how to improve this process."

We have started to capture lessons learned from challenges faced to date. We have applied lessons learned



MSgt Evander Andrews' squadron hat adorns his casket at his final resting place in Arlington National Cemetery, Oct. 22. Sergeant Andrews died Oct. 10 in a construction accident while deployed to the northern Arabian Peninsula. He is survived by his wife, Judy; four children, ages 2 to 9; a sister; and his parents Mary and Obder Andrews. (Photo by TSgt Jim Varhegyi)

Service before Self

Service sometimes means the ultimate sacrifice, and the first American casualty of Operation ENDURING FREEDOM was a civil engineer, MSgt Evander Earl Andrews. Maj Gen Earnest O. Robbins, The Air Force Civil Engineer, said, "The next time you hear someone describe engineers as 'tail' in some inane discussion of tooth-to-tail ratio, I suggest you show them this photo. We are grateful for MSgt Andrews, his service and the service of all the members of Air Force civil engineering. The nation is grateful, too."



Deployed 552nd CES members erect a California tent during Operation ENDURING FREEDOM, Oct. 30. (Photo by A1C Maryann Walker)

from Operation DESERT STORM and the Kosovo conflict, and are now applying lessons learned at the start of this campaign.

Examples include: get CE representation on site survey teams, improve sourcing of Harvest Eagle/Harvest Falcon kits that are essential to force beddown, and work with the Army at sites deploying their Force Provider kits. Also, as the clamor for more ramp space was heard throughout the AOR, AFCESA put together a simple matrix for the operators that explains the



A civil engineer member of the 355th AEG makes a height adjustment prior to a shower trailer being moved into position at an undisclosed location Nov. 17. (Photo by TSgt Jack Braden)

full capabilities of AM-2 matting.

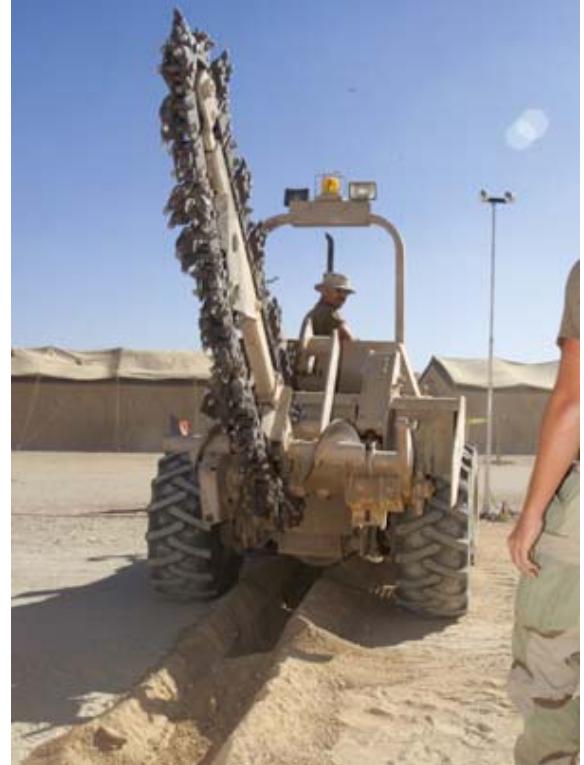
Satellite communication and other state-of-the-art technology is making the job easier for pavement evaluation teams, RED HORSE and other CEs dispersed throughout the AOR, and we are looking to make that communication even more efficient. As flying bases were built up, a concept of operations was needed to assess fire protection risks and deploy a finite number of fire protection assets in concert with the operations tempo. NBC

operations have had to be flexible to meet the new threats — threats that are evolving every day.

One of the biggest lessons learned is simply getting CE forces into bare bases and other locations early so they can evaluate potential air bases before a majority of other forces arrive. Whether our mission is to assess damage, evaluate pavements, or set up the base infrastructure, CE forces are “early enablers” and have expertise needed by the warfighting commanders.

For example, as of December, two separate pavement evaluation teams from AFCESA had conducted surveys of more than a dozen airfields in the AOR. The U.S. Central Command Air Forces Civil Engineer, Lt Col Dave Nelson, reported, “Both of these teams have done one hell of a job. They provided and continue to provide incredible support, not only to Combined Forces Air Component Command needs, but also to Combined Forces Land Component Command and U.S. Central Command requirements.”

Before it's all over, no doubt we will capture and refine many more lessons learned. And we need your help. If you have lessons learned or new ideas on how to work smarter,



Digging a trench at a forward-deployed location Nov. 9. (Photo by TSgt Marlin Zimmerman)

please contact AFCESA or The Office of the Civil Engineer. Together, we can meet every challenge!

Lt Col Greg Cummings is chief, Expeditionary Engineering Branch, Readiness and Installation Support Division, Office of the Civil Engineer, HQ U.S. Air Force. Lt Col John Martin is Colonel Cummings' individual mobilization augmentee.



As the sun sets marking another deployment day for U.S. Military personnel worldwide, SSgt Benjamin Pelky, 823rd RHS, puts the finishing touches on the base of what will be another tent city for troops deployed in support of Operation ENDURING FREEDOM.

(Photo by TSgt Scott Reed)